

Cost-effectiveness analysis for acalabrutinib in the treatment of patients with relapsed/refractory mantle cell lymphoma (r/r MCL) in China

INTRODUCTION

Mantle Cell Lymphoma (MCL)

- A rare and aggressive subtype of NHL $(3.5\% \text{ of all incident NHL}^{[1]} \text{ and } 3,249 \text{ prevalent cases in China}^{[2]})$
- The median age of diagnosis is 65 and the gender ratio is 2-3:1^[3]. Patients are often diagnosed with advanced disease, have a poor prognosis, and are refractory to initial treatment ^[4]
- Clinical Oncology (CSCO) Guidelines 2023^[5]

This study aims to economically evaluate acalabrutinib compared to ibrutinib for r/r MCL patients in the Chinese healthcare system.

METHODS



Efficacy

- The proportion of patients was calculated based on survival data from PCYC-1104 for ibrutinib
- The survival endpoints PFS and overall survival (OS) for acalabrutinib is modelled by applying hazard ratio (HR) ^[2]which gained from the matching-adjusted indirect comparisons (MAIC) of acalabrutinib versus ibrutinib

Cost

Only direct medical costs associated with each intervention were calculated

Utility

- Given the limited data in China, the utility input of health states were based on the same sources as those in TA502
- The disutility values of AE are from related literatures. More details are omitted





Chang Su¹, Xiaoning He^{1*} ¹·School of Pharmaceutical Science and Technology, Tianjin University, Tianjin, China

• Acalabrutinib and ibrutinib are BTK inhibitors, which are level I recommendation from Chinese Society of

Parameter	Base-case		
IR of PFS from the MAIC of acalabrutinib	0.84		
HR of OS from the MAIC of acalabrutinib	0.76		
Acquisition costs per cycle of ibrutinib	¥17,603		
Subsequent treatment costs per cycle	¥166,446		
Disease management costs of PFS	¥1,689		
Disease management costs of PD	¥1,233		
Adverse event costs of acalabrutinib	¥3,112		
Adverse event costs ibrutinib	¥7,053		
End-of-life therapy costs (one-time)	¥11876		
Utility value of PFS	0.78		
Utility value of PD	0.68		

Table 1. Model input

RESULTS

Base case study

Over a time horizon of 20 years, Acalabrutinib is a **dominant alternative** to ibrutinib, considering a willingness-to-pay (WTP) threshold of 2 times the Gross Domestic Product per capita (CNY171,396, 2022) in China



CONCLUSIONS

Discounting rate-costs

Disease management costs-PD

Disease management costs-PF

Given a threshold of 2 times of GDP per capital (¥171,396) in China, acalabrutinib is a cost-effective alternative in the treatment of r/r MCL.

REFERENCES

[1]H S, ID O, J F, et al. Global Cancer Statistics 2020: GLOBOCAN Estimates of Incidence and Mortality [J]. 2021. [2]LATIMER. NICE DSU technical support document 14: survival analysis for economic evaluations alongside clinical trials-extrapolation with patient-level data [J]. 2011. [3]C T, SM K, S A, et al. Matching-adjusted Indirect Comparisons of the Efficacy and Safety of. [4]G T, P H, A B. - A Criterion-based Approach for the Systematic and Transparent Extrapolation of [J]. - J Health Econ Outcomes Res 2015. [5] Chinese Society of Clinical Oncology (CSCO) Guidelines Working Committee. Diagnosis and treatment guidelines for lymphoma [J]. 2022.



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Outcomes	Base-case				
Costs					
Acalabrutinib	¥406,587				
Ibrutinib	¥504,811				
Incremental	-¥98,224				
QALYs					
Acalabrutinib	3.70				
Ibrutinib	2.92				
Incremental	0.78				
ICER(¥/QALY)	Dominant				

Table 2. Outcomes from a healthcare system perspective

Sensitivity study

Based on 1000 Monte Carlo simulations, the probability-sensitivity analysis showed that when the threshold is 1.5 times GDP per capita, the probability of acalabrutinib being cost-effective is almost 100 %

• The deterministic sensitivity analysis showed that HR value of OS、 PFS to ibrutinib and the acquisition costs per cycle of acalabrutinib had great impact on ICER

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